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(54) **Transformer comprising an air gap.**

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Description

The invention relates to a transformer comprising a ferromagnetic core in which there is provided at least one air gap which is filled with a non-ferromagnetic material comprising a spacer which is embedded in cement. Such a device is known from GB—A—1,246,458. The spacer in the known device is formed by a quantity of hard grains, for example of glass, which are mixed with the cement. The diameter of the grains determines the width of the air gap.

It has been found in practice that the manufacture of glass grains having the necessary dimensional precision is comparatively difficult. Moreover, a manufacturer of ferromagnetic cores for transformers or choke coils uses only comparatively small quantities of glass grains, even when large numbers of cores are manufactured. Consequently, the manufacture of glass grains with the necessary precision is not profitable, so that such glass grains are expensive and often difficult to procure.

It is the object of the invention to propose a device of the kind set forth in which the glass grains are replaced by a spacer which is less expensive and easier to procure. To achieve this, the device in accordance with the invention is characterized in that the spacer consists of a plate made of gauze.

Gauze is usually readily available at an attractive price because it is also manufactured for other purposes. A very suitable gauze is the kind which is customarily used for silk-screening.

The invention will be described in detail hereinafter with reference to the accompanying drawing. Therein:

Figure 1 is a diagrammatic side elevation of an embodiment of a transformer in accordance with the invention, and

Figure 2 is a longitudinal sectional view at an increased scale of the part of the core of the transformer shown in Figure 1 in which the air gap is situated.

Figure 1 shows a transformer comprising a ferromagnetic core 1, for example of ferrite, which consists of two parts, the transformer further comprising a primary coil 3 and a secondary coil 5. At the area of the primary coil 3 the core 1 is interrupted by an air gap 7 (denoted by broken lines).

Figure 2 is a detailed longitudinal sectional view of the air gap 7 together with the surrounding parts of the primary coil 3 and the core 1. The air gap 7 has a predetermined width d. This width equals the thickness of a gauze plate 9 which is situated in the air gap 7. The gauze is embedded

in a layer of cement 11. During the manufacture of the core 1 the plate 9 which is drenched in the cement 11 is arranged between the two parts of the core which are subsequently pressed together and the cement is allowed to set, for example by heating. The diameter of the wires 13 constituting the gauze of the plate 9 then automatically determines the thickness d of the air gap without it being necessary to measure and adjust the spacing of the two parts of the core during manufacture. The thickness d is slightly smaller than twice the diameter of the wires 13 because the wires 13 are slightly compressed at the points of contact. A very suitable type of gauze is the type which is customarily used for silk-screening, for example Estal Mono PE 275 which is made by Schweizerische Seidengazefabrik A.G., Thal.

Claims

1. A transformer comprising a ferromagnetic core in which there is provided at least one air gap which is filled with a non-ferromagnetic material comprising a spacer which is embedded in cement, characterized in that the spacer consists of a plate made of gauze.

2. A transformer as claimed in Claim 1, characterized in that the plate is made of a type of gauze which is customarily used for silk-screening.

Patentansprüche

1. Transformator mit einem Ferromagnetkern, in dem wenigstens ein Luftspalt vorgesehen ist, der mit einem nichtferromagnetischen Werkstoff gefüllt ist, der ein in Zement eingebettetes Distanzstück enthält, dadurch gekennzeichnet, daß das Distanzstück aus einer Gazeplatte besteht.

2. Transformator nach Anspruch 1, dadurch gekennzeichnet, daß die Platte aus einer Art von Gaze angefertigt ist, die normalerweise bei Siebdruck Verwendung findet.

Revendications

1. Transformateur comportant un noyau ferromagnétique dans lequel est prévu au moins un entrefer rempli d'un matériau non ferromagnétique comportant une entretoise noyée dans du ciment, caractérisé en ce que l'entretoise est constituée par une plaque formée de gaze.

2. Transformateur selon la revendication 1, caractérisé en ce que la plaque est réalisée à partir d'un type de gaze couramment utilisée pour la sérigraphie.

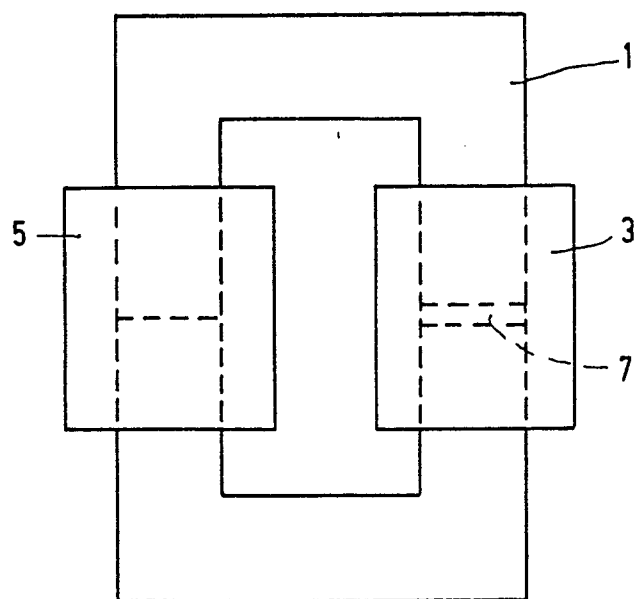


FIG. 1

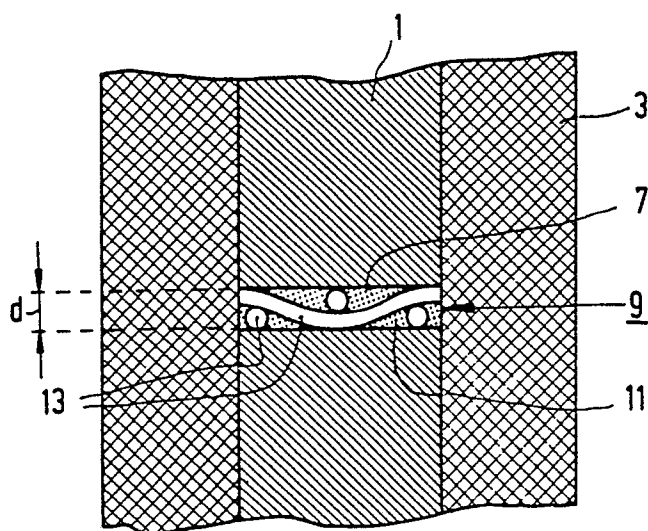


FIG. 2